

REPORT OF THE COMMISSION ON NOXIOUS FUMES

1949

To the Governor and the General Assembly of Maryland:

The Commission on Noxious Fumes herewith submits its report, as requested by Joint Resolution No. 16 passed at the Regular Session of 1949. This Resolution was introduced by Delegate Leo C. Geraghty (5th District, Baltimore City) within a few weeks following the death of nineteen persons at Donora, Pennsylvania, from combined conditions of fog and industrial fumes. Pursuant to the Resolution, the Governor appointed this Commission to study the problem of poisonous and noxious fumes in the State of Maryland, with the Commission being requested to report its findings and recommendations to the Governor and the General Assembly in advance of the 1950 session.

The Commission organized on August 30, 1949, with Frank C. Wachter as Chairman. Following Mr. Wachter's removal from Baltimore City because of having accepted employment in another state, Senator George W. Della (6th District, Baltimore City) became Chairman.

During the progress of its work the Commission compiled a large amount of data on the general subject of air pollution, including the voluminous report of the United States Public Health Service on the Donora incident. The Commission had the benefit of the active participation in its discussions of officials of the State and Baltimore City Departments of Health. There also were extended discussion meetings with Dr. H. H. Schrenk, Chief, Environmental Investigations Branch, Public Health Service; Mr. George N. Brancato, Chief, Baltimore Leather Bureau; and Dr. Louis C. McCabe, Chief, Air and Stream Pollution Research, Bureau of Mines. Dr. McCabe formerly was in charge

of the air pollution control program at Los Angeles, California.

The Commission has been impressed both with the large amount of research which has been done on air pollution and also the striking need for much more research. Study of smoke control, which is one phase of air pollution, is a century or more old. The report made by Lemuel Shattuck in 1850 for the Commonwealth of Massachusetts recommended "that provision be made for obtaining observations of atmospheric phenomena," and went on to say that here was a vast and as yet unexplained field of study, which "promises results of great value and importance to science and to human life." This recognition of the importance of meteorology in the control of air pollution might have been written only yesterday, for it is recognized as an important aspect of the whole problem.

This Commission has concentrated its work on the causes and effects of noxious fumes, as distinguished from smoke. Insofar as the two may be isolated, smoke control is a simpler and more obvious problem than are the detection and treatment of fumes. It is clear, of course, that such contamination of the air bears a direct relationship to the industrialization of any community. It is common knowledge, too, that Maryland over a long period of years has been changing from a predominantly agricultural state into an industrial and manufacturing state; and the trend is not yet complete. Between 1939 and 1947, the number of production workers in this State increased by more than one third.

However, the severity of the problem of atmospheric pollution is not entirely proportional to the volume of smoke, dust or gases discharged in a given area. The ability of the atmos-

phere to receive, disperse and dilute these wastes is of high importance. Smoke and industrial fumes are quickly dispersed and carried away on a bright, breezy day; but when there is a combination of atmospheric stability (known as "inversion") and stagnation (i.e., low wind velocity), smoke and fumes accumulate and concentrate along the ground. The frequency of occurrence and duration of periods of atmospheric stability is of importance in planning the degree of air pollution control required in any given community.

The topography of Maryland is one of extreme variation from the mountains in the West to the Piedmont regions in central Maryland and the sandy coastal plain of the Eastern Shore. Detailed weather data are not complete for all parts of the State, but there is rather full information available for the heavily industrialized Baltimore area. Prevailing winds in this region are from the southwest and south. Fog is not a prevalent condition; dense fog is usually reported only from 12 to 17 days annually. Conditions of atmospheric stability or inversion occurred over a two-year period in Baltimore a maximum of 65 hours monthly; in Donora, by contrast, such conditions persisted almost continuously for seven days, a total of at least 168 hours. Thirty years of weather records at Donora indicated that perhaps once in every ten or fifteen years that community might expect conditions of inversion for 168 continuous hours. In Baltimore, on the other hand, inversion for a total of 275 hours in an entire month might occur but once in fifty years. On the record of meteorological conditions alone, therefore, there is hardly even a remote possibility of a disaster in Baltimore like that in Donora. There

are towns in Western Maryland, as at Cumberland and Luke, where industrial communities are settled in valleys and surrounded by mountains, giving some approximation of the topography at Donora. Meteorological data for these and other areas in Western Maryland are not sufficiently complete to provide a summary of the frequency of inversion.

The irritants in industrial fumes may have four main areas of effect:

1. Those affecting mainly the upper respiratory tract and possibly the eyes;
2. Those affecting the upper respiratory tract and also the deeper structures such as the bronchi;
3. Those acting primarily upon the lungs and to a much lesser extent upon the upper respiratory tract;
4. Those producing a systemic toxic action.

Such irritants as sulphur dioxide, chlorine, and hydrofluoric acid when present in the air in significant concentrations have at least a high nuisance value and may have these other effects:

1. Intoxication and death under unusual conditions;
2. Irritation to the eyes;
3. Irritation to the throat;
4. Killing vegetation;
5. Reduction of ultraviolet penetration by the sun;
6. Reduction in visibility;
7. Difficulty in providing fresh air for home ventilation;
8. Other psychic effects coming from a continuing nuisance.

in addition, air pollution certainly accomplishes a lot of economic damage. As one example, a study made in Pittsburg in 1913, when values were much lower than now, placed the annual per capita cost in that area of laundry and dry cleaning, painting, extra lighting, wasted fuel value, etc. at twenty dollars.

Some effective work in reducing atmospheric pollution

has been accomplished over a period of years by the Baltimore City Health Department, under its general powers for abating nuisances. This Department, however, has had neither the money nor the personnel to devote to a thorough-going program for research and control of air pollution. Baltimore and Cumberland, and perhaps other municipalities in the State, also have enacted ordinances dealing solely with smoke control. With these local exceptions, there has been no public effort to reduce atmospheric pollution in Maryland.

This Commission has been impressed with the vast amount of research now being conducted on the general problem of atmospheric pollution. Industrial plants on their own account are spending literally millions of dollars annually, and the United States Public Health Service also is conducting a wide program of study. Against this background and the general interest in the subject, this Commission recommends that the State of Maryland participate in a preventive and life-saving program, and that an annual appropriation be made for the study and control of air pollution. Specifically, we suggest that the State appropriate \$100,000. each year to the State Department of Health for this work, with at least one-half of this amount to be allocated to the study and control program of the Health Department of Baltimore City. These funds would make possible not only an extended program against atmospheric pollution, but would also provide an organized means for observing and profiting from the research and control programs of the United States Public Health Service and of other states and communities throughout the United States.

It is the consensus of opinion of this Commission that ultimately a State-wide air pollution control agency may be necessary, for it is certainly true that atmospheric currents do not observe political boundaries. Such an agency would have the duties of (1) studying the sources of air pollution in our industrial areas; (2) policing these areas; (3) correcting bad conditions wherever possible; and (4) conducting research and studying the results of research by others, to ascertain the ultimate effect of air pollution on the health of the community and to establish permissible limits of pollutants.

For the present, however, we recommend only an appropriation by the State to the State Health Department, for the study and control of air pollution. A proposed bill covering such an appropriation is appended to this report.

Respectfully submitted,

Charles V. Brannock,  
Charles C. G. Evans,  
Mrs. James W. Foster,  
Leo C. Geraghty,  
Rev. I. Wilson Kepner,  
John Klauzenberg,  
Dr. John C. Krantz, Jr.,  
Cornelius W. Kruse,  
Dr. Robert H. Riley,  
Harry O. Thommen,  
Richard H. Turk,  
Dr. Huntington Williams,  
George W. Della, Chairman

Carl N. Everstine,  
Secretary.

Baltimore  
December 15, 1949

A BILL  
ENTITLED

AN ACT to add a new section to Article 43 of the Annotated Code of Maryland (1939 Edition), title "Health," said new section to be known as Section 115A, to follow immediately after Section 115 of said Article, and to be under the new sub-title "Noxious Fumes," relating to an appropriation by the State for the study and control of air pollution.

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Section 1. BE IT ENACTED BY THE GENERAL ASSEMBLY OF MARYLAND, That a new section be, and it is hereby added to Article 43 of the Annotated Code of Maryland (1939 Edition), title "Health," said new section to be known as Section 115A, to follow immediately after Section 115 of said Article, to be under the sub-title "Noxious Fumes," and to read as follows:

Noxious Fumes

115A. The Governor is hereby authorized and directed to place in the annual budget as submitted to the General Assembly at each regular 30-day and 90-day session thereof, an item for appropriating the sum of at least one hundred thousand dollars annually to the State Department of Health for the study and control of air pollution in Maryland. The Budget shall specify that not less than one-half of such appropriation shall be paid over by the State Board of Health to the Health Department of Baltimore City, for use in the study and control of air pollution in and adjacent to the City of Baltimore.

Sec. 2. AND BE IT FURTHER ENACTED, That this Act shall take effect June 1, 1950.